

In a film forming method for forming an optical multilayer filter by detecting the

thickness of each layer by means of an optical thickness monitor (OTM) 15 and by controlling a film forming apparatus 11 based on the OTM detected output: the light source of the OTM 15 is formed by a variable wavelength light source whose wavelength is variable over the range of  $\lambda_1$  nm to  $\lambda_2$  nm, including  $\lambda$  nm; the optical thickness of each of  $\lambda/4$ -oriented layers is optimized within the range of  $\lambda_1/4$  nm to  $\lambda_2/4$  nm; the wavelength of the variable wavelength light source 12 for each layer is selected so that its transmittance reaches an extreme value at the optical thickness of each layer; and the formation of each layer is stopped upon detection of the extreme value of the transmittance.